

Department of Forensic Sciences
Forensic Science Laboratory Division

**Latent Fingerprint Unit
Training Manual**

Latent Fingerprint Unit Training Manual

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1.0 Training Goals and Objectives

1.1 Overview of the Training Manual

- 1.1.1 The purpose of this manual is to provide a format for training new employees in the Latent Fingerprint Unit (LFU) of the District of Columbia, Department of Forensic Sciences (DFS). The training outline provides guidance for training on specific topics of competence for Fingerprint Examiner Trainees. The complete training program involves traditional instruction (e.g., modules, readings, etc.), e-learning as well as apprentice style training; working with qualified examiners. These qualified examiners will act as designated Trainers under the direction of the LFU Manager, LFU Technical Leader, DFS Training Manager and/or designee.

1.2 Format of the Training Program

- 1.2.1 The LFU Training Program, in its entirety, is designed for the examiner who has minimal background or experience in the subject matter. The training program is divided into modules. Each module contains required readings, e-learning component(s), practical exercises and study questions, in addition to other duties as assigned. The topics covered in the training program should impart a fundamental understanding of the work that an examiner is expected to understand and perform in the position. The LFU Training Program is intended to be used as a *guide* for training and is not a rigid, inflexible program. Many of the modules do not have to be completed in sequence or order in which they are presented, and may be modified depending on the needs of the LFU, DFS, trainer(s), and/or facility availability. The LFU Training Program may consist of in-service training, training from external agencies, vendors, or a combination.
- 1.2.2 It is estimated that this training program can be completed, in its entirety, in approximately one and a half (1.5) to two (2) years; however, the program may take more or less time to complete depending on the progress of the employee and the circumstances in the LFU. The estimated timeframe for a trainee to complete the training program is dependent upon their assigned duties. It may take more or less time to get practical exposure to some of the techniques in the outline due to the nature of the cases received by LFU.
- 1.2.3 Satisfactory understanding of the information learned in the modules may be demonstrated through written examinations (most require a grade \geq

80%), oral presentations, practical examinations and/or exercises. The format of the training program is designed to provide:

- 1.2.3.1 self-paced modules to allow for schedule flexibility,
 - 1.2.3.2 increased time available for hands on apprentice style training,
 - 1.2.3.3 reduced time from training inception to casework production,
 - 1.2.3.4 consistent quality of training,
 - 1.2.3.5 documentation and tracking of training for quality purposes
- 1.2.4 It is paramount that the Examiner Trainee understands that the ultimate objective of this training is:
- 1.2.4.1 To independently and competently examine latent fingerprint evidence in order to perform accurate and high-quality analyses and comparisons.
 - 1.2.4.2 To independently and competently examine fingerprint evidence to produce reliable and reproducible results and report all analytical findings.
 - 1.2.4.3 Demonstrate competence in presenting information to the Customer, including testimony in court as an Expert Witness.

1.3 Individual Training Plans (ITPs)

- 1.3.1 Each Trainee will have their previous training, experience, education, published articles, and other credentials reviewed by the LFU Manager. Additional reviews may be performed by the DFS Training Manager/LFU Technical Leader and/or designee. Collected data and information obtained from detailed interviews of the LFU Trainee will be utilized to establish a baseline in regard to the Trainee's technical knowledge, skills and abilities. The knowledge gaps identified will become the basis for an individual training plan tailored to the Trainee's needs. This process will be flexible, focused, and efficient approach for training individuals new to the discipline, as well as individuals that have been involved in training programs elsewhere. Demonstrated competency levels may allow a Trainee to test out of a particular module within the Training Program.
- 1.3.2 The ITP is completed by LFU management or designee and documented on an Individual Training Plan form (Document Control Number 12823). The ITP is approved by the LFU Manager/Technical Leader, DFS Training Manager and/or designee. Once a training plan has been

established for a Trainee, they will be assigned to trainer(s) for the training. Trainer(s) will serve as the first line verification that deliverables and milestones within the training program have been met. The progress of the Trainee will be monitored through the use of module checklists, in which successful completion of a module will be indicated by the initials of the Trainee, Trainer(s), and LFU Management.

1.4 Contractors & Previously Experienced Examiners

1.4.1 Technical Assessment Review

- 1.4.1.1 A technical assessment review of the new employee will be conducted & documented by the LFU Technical Leader and/or Unit Manager.
- 1.4.1.2 The technical assessment review will include, but not limited to, a review of the new employee's educational background, previous work experience, training & certifications.
- 1.4.1.3 Based on the results of the technical assessment review an ITP will be completed by the LFU Technical Leader and/or Unit Manager.
- 1.4.1.4 The ITP will address what additional training is needed and/or competency test requirements that must be successfully completed prior to authorization to perform technical duties.

1.5 Oral Boards

- 1.5.1 Oral boards are designed to test the Trainee's knowledge on what they have learned in the training program and can serve as a form of competency testing. The purpose of oral boards is to prepare the Trainee for court testimony by exposing them to presentation of technical material throughout the training process and breaking down technical processes into manageable learning modules.
- 1.5.2 Guidelines for Oral Boards:
 - 1.5.2.1 Trainees will be provided a topic / question to address within certain modules. The Trainee shall answer the topic/question orally to a panel, without notes. Oral boards can be formatted as a discussion or presentation. Following the oral presentation by the Trainee, the panel members will ask a

series of questions related to the topic, or topics previously mastered, in the training program. Two types of responses may be expected. First, a technical response. Second, there may also be times where the Trainee will need to respond as if speaking to a jury. It will be made clear during the question which type of response is expected.

- 1.5.2.2 Each question posed by the panel will be documented.
- 1.5.2.3 The oral board panel will consist of evaluators, observers may be permitted. Three (3) evaluators are required, all evaluators being subject matter experts (i.e. LFU Manager/Technical Leader, Trainer, and qualified examiner). At least one evaluator must be a qualified LFU examiner. Permitting “observers” is at the discretion of the Forensic Science Laboratory Director and/or LFU Management. Observers can review and provide feedback to the Trainee as to performance; however, they will not be a grading evaluator.
- 1.5.2.4 Each evaluator is required to document the assessment of the Trainee’s responses using an Oral Board Scoring Sheet (Document Control Number 13203). The rubric will show what will be expected of the Trainee and used to evaluate their performance.
- 1.5.2.5 In order to pass the oral board, the Trainee must demonstrate sufficient knowledge of the subject, while presenting the information in an easy to understand method, and sufficiently answer technical questions posed by the panel.

1.6 Thirty (30) Day Progress Review

- 1.6.1 Each Trainee’s progress should be reviewed and reported every thirty days by LFU Management or designee. It is the responsibility of the Trainee to report their progress on an LFU 30-Day Progress Report form (See Appendix A). The report should be submitted to LFU Management and the DFS Training Manager or designee, at the end of each month for the duration of the training. This 30-Day Progress Report serves as the basis for Trainees to later review their progress. These reports will serve as a reference in months and even years following qualification.

1.7 Training Binder

- 1.7.1 All practical work conducted by the Trainee shall be maintained in a "Training Binder". Whether notes are maintained electronically or hard copy is up to the discretion of the Trainee. The training binder should be available for final review at the end of the training program. This binder will serve as a reference in the months and even years following qualification, and will assist in documenting the progress during training.

1.8 Practical Examination(s)

- 1.8.1 Some modules will consist of a practical examination. Trainees must successfully complete the practical component, which could consist of a demonstration, completion of a relevant examination, and/or worksheet and discussion. Documentation will be reviewed by the Trainer(s) or designee.
- 1.8.2 Module 11, Friction Ridge Analysis and Comparison, contains a series of practical exercises. These exercises are not considered examinations; however, failure to achieve a grade $\geq 80\%$ may result in retraining and possible module failure due to the importance of these exercises in gauging an Examiner's skills and abilities and the fact that they simulate real casework.

1.9 Forensic Examiner Competency Test(s)

- 1.9.1 Regardless of previous experience, each Trainee will be required to pass competency test(s) for all methods/procedures for each discipline and sub-discipline for which they will be expected to perform examinations.
- 1.9.2 The competency test(s) will include practical components. These will be provided and administered by the LFU Manager/Technical Leader or designee.

1.10 Mock Trial

- 1.10.1 Upon completion of the LFU Training Program, the Trainee will participate in mock trials, where applicable. The Trainee will be expected to successfully complete, at minimum, one internal mock trial and one external mock trial. The external mock trial will be performed by attorneys external to the agency.
- 1.10.2 The purpose of the mock trial is to evaluate the Trainee's ability to testify as an expert witness in judicial proceedings. The mock trials will highlight

the Trainee's oral presentation skills and their ability to relate complex scientific and technical information to lay persons. Sessions will be conducted in a simulated courtroom situation with the proceedings being formal and structured.

- 1.10.3 The mock trials may occur with a gradual succession of difficulty and may cover multiple subcategories of the work that will be performed as a Forensic Examiner. The mock trial(s) may be based on a mock case worked during the mentoring period, notes, diagram(s), and/or report(s). The Trainee will defend their work and/or conclusions reached from the review and/or work. The Trainee will be scored using the Mock Trial Scoring Sheet (Document Control Number 7495). Results and feedback of the mock trial will be provided to the Trainee. The mock trials may also be recorded for future reference.

1.11 Completion of the Program

- 1.11.1 Successful completion of all of the requirements of the training program signifies that the LFU Trainee is qualified to perform as a Forensic Examiner at the DFS. The LFU Manager/Technical Leader must concur in regard to the Trainee's competency before the authorization memo is issued.

1.12 Authorization Memo

- 1.12.1 A Forensic Examiner Trainee will receive an authorization memo, issued by the LFU Manager/Technical Leader, prior to performing duties within the LFU, following the determination of competency. This authorization memo will clearly outline the techniques the Trainee is competent to perform, whether it is in independent casework examination, case reviews and/or use of equipment. Training in new, or additional, techniques will be appropriately documented and the LFU Trainee will be competency tested prior to assuming case related duties.
- 1.12.2 Trainees in the latent print comparison program will have a minimum of 6 months supervised casework. In the Evidence Processing Laboratory, trainees will have a minimum of 1 month of supervised casework. The cases verified during this period will be documented on the LFU Supervised Casework Observation Form (Appendix B). The trainer(s) and other assigned senior Examiners will be responsible to perform 100% verification of all the Trainees' findings to include all analysis decisions, comparison conclusions, and suitability determinations.

- 1.12.3 Upon successful completion of the mentored/supervised casework phase, a new qualification memo will be issued outlining the procedures the Examiner is now competent to perform independently.

1.13 Failure to Meet the Goals of the Training Program

- 1.13.1 Failing twice in any single module competency or failure to successfully reach all milestones in the estimated time (with exception for situations outside of the control of the Trainee) may constitute a reason for removal from the LFU Training Program.
- 1.13.2 Resolution of such cases will rest with a committee consisting of LFU Management, Forensic Science Laboratory Director, and DFS Training Manager or designee.
- 1.13.3 Remedial training may occur within the training program to address any short coming or exercise that has not been completed to the satisfaction of the Unit Manager/Technical or Trainer(s).
- 1.13.4 The ITP will be updated to include additional remedial training. The DFS Training Manager and/or Senior Deputy Director must be notified to assist with oversight and consistency through the Agency. New DFS employees may be subject to dismissal under the probationary appointment agreement.

1.14 Training Documentation

- 1.14.1 The following shall be maintained and serve as the technical training file:
 - 1.14.1.1 Individual Training Plan
 - 1.14.1.2 Written and oral tests
 - 1.14.1.3 Training module checklists
 - 1.14.1.4 Copies of presentations
 - 1.14.1.5 Competency test(s)
 - 1.14.1.6 30-Day Progress Report(s)
 - 1.14.1.7 Signed and dated Authorization Memo(s)

2.0 Roles and Responsibilities

2.1 LFU Trainee

- 2.1.1 Shall be responsible for maintaining a training binder (whether hard or soft copy) which contains the records (*i.e.*, notes, worksheets, photographs, etc.) generated during the training program.
- 2.1.2 Has the ultimate responsibility for learning the materials necessary to successfully complete a competency test. The Trainee should take an active role in obtaining the information needed (reading, observation, discussing/asking questions, etc.) to do so.
- 2.1.3 Shall provide 30 Day Progress Reports to the LFU Trainer, LFU Manager and DFS Training Manager on the last business day of each month.
- 2.1.4 Shall immediately notify the LFU Management of any problems or questions that arise, if their training is not progressing, they are experiencing difficulty with the exercises, or to suggest modifications to the training program.

2.2 Trainer(s)

- 2.2.1 Shall be competency and proficiency tested in the area of instruction (where applicable) and/or have documented experience working in the subject matter of instruction.
- 2.2.2 Shall be responsible for demonstrating a particular technique and observing the Trainee perform the same procedure where applicable.
- 2.2.3 Shall reinforce information gained from reading materials through detailed discussion of the technique during demonstration and/or observation, including theoretical and practical aspects.
- 2.2.4 Shall be responsible for initialing and dating training module checklists.
- 2.2.5 Shall keep LFU management and DFS Training Manager (or designee) apprised of any deficiencies or issues that may arise with a trainee. Deficiencies may include; not understanding technical information, not performing work in a timely fashion, refusing to complete assignments, or general personnel issues.
- 2.2.6 Should participate in oral boards.
- 2.2.7 May meet with the LFU Management and/or DFS Training Manager (or designee) periodically to discuss the progress of the Trainee.

2.3 LFU Management (or designee) / Technical Lead (if applicable)

- 2.3.1 Shall complete ITPs and oversee the training plan for each trainee. Shall monitor the Trainee's progress and ensure the Trainee is adhering to the prescribed timeline for completion of milestones.
- 2.3.2 Shall review the academic transcripts and training records (as per the position description, if applicable) for newly qualified Examiners and approve their qualifications prior to independent casework analysis and document such review.
- 2.3.3 Shall sign off on module checklists, where applicable, and may serve in the capacity as a trainer.
- 2.3.4 Shall review each 30-Day Progress Report to monitor the progress of the Trainee.
- 2.3.5 Shall review the Trainee's training binder for completeness and accuracy at the end of the training program.
- 2.3.6 Shall issue the Authorization Memo upon satisfactory completion of all required training.
- 2.3.7 Shall issue written pass/fail feedback to the Trainee at the end of the mock trials.
- 2.3.8 Shall evaluate the need and assess the extent of retraining Examiners.
- 2.3.9 Shall complete and approve retaining plan(s), when necessary for each Examiner.
- 2.3.10 Shall keep management apprised of ongoing progress of each trainee.
- 2.3.11 Shall periodically review the training program for relevance and update the program accordingly with the DFS Training Manager (or designee)

2.4 DFS Training Manager (or designee)

- 2.4.1 Should review each 30-Day Progress Report to monitor the progress of the Trainee.
- 2.4.2 Shall periodically review the training program for relevance and update the program accordingly with the LFU Manager/Technical Leader.
- 2.4.3 Shall maintain training documents in technical training file for each trainee.

2.5 External Instructors

- 2.5.1 Instructors that are external to the DFS will be evaluated and approved, based on their knowledge and experience of the subject matter of instruction, by the LFU Manager/Technical Leader and DFS Training Manager.

3.0 DFS Orientation and Introduction

3.1 Objectives:

- 3.1.1 Familiarize the LFU Trainee with the general operation and organization of the DFS. The Trainee will have an understanding of the expectations of the Latent Fingerprint Unit Training Program, quality issues relevant to laboratory operations, and ethical and professional responsibilities of the position. A training plan will be developed for each LFU Trainee based on a review of background and experience.
- 3.1.2 The LFU Trainee should have orientation/training in the following:
 - 3.1.2.1 DCHR New Employee Orientation
 - 3.1.2.2 Attend DFS Onboarding Training
 - 3.1.2.3 Meet with Agency Director (will be set up through Management)
- 3.1.3 The Trainee should have an understanding of the overall structure of the DFS, FSL, and LFU. Topics will include but are not limited to the following:
 - 3.1.3.1 DFS Organizational Overview (Onboarding)
 - 3.1.3.2 Performance Evaluation/ Expectations (Supervisor/Manager)
 - 3.1.3.3 Overview/Tour of the Consolidated Forensic Laboratory (CFL)
- 3.1.4 The LFU Trainee should have an understanding of the practices and procedures of the Quality Assurance Program in place at the DFS. Topics include but are not limited to the following:
 - 3.1.4.1 Laboratory accreditation and the quality assurance system
 - 3.1.4.2 Review and general understanding of DFS Quality Manuals to include: Quality Assurance Manual (QAM), Department Operations Manuals (DOMs), Laboratory Operations Manuals (LOMs), and Standard Operating Procedures (SOPs) for LFU

3.1.4.3 Review and discussion with trainer on LFU SOPs and quality documents that relate to LFU.

3.1.5 The Trainee should have an understanding of the ethical and professional responsibilities for LFU Examiners to include

3.1.5.1 Professionalism

3.1.5.2 Competency and Proficiency

3.1.5.3 Clear Communications

3.2 Reading Material:

3.2.1 Quality Assurance Manual (QAM), Department Operations Manuals (DOMs), Laboratory Operations Manuals (LOMs), and Standard Operating Procedures (SOPs) for LFU

3.3 Study/Discussion Questions:

3.3.1 None

3.4 Practical Exercises/Skills:

3.4.1 The LFU Trainee should automatically receive information pertaining to Objective 3.1.2 as a new employee. If the Trainee has not received the information outlined in Objective 3.1.2 **within the first two weeks** of employment, they should notify their first line supervisor.

3.4.2 The LFU Manager will conduct, or appoint a member of the staff, to meet with the LFU Trainee to ensure the training outlined in Objectives 3.1.3 – 3.1.5 have been met.

3.4.3 The LFU Trainee will meet with the LFU Manager and/or DFS Training Manager to discuss prior experience and educational background.

3.5 Demonstration of Competency:

3.5.1 None.

3.6 Documentation:

3.6.1 Completion of the tasks in this module will be documented on the checklist titled "Module 3.0 Checklist – DFS Orientation and Introduction".

MODULE 3.0 CHECKLIST

DFS Orientation and Introduction

Trainee:	Trainer:	Job Title:
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READING MATERIAL

	Trainee Initials & Date
Trainee has read all the required readings for Module 3.0	

TRAINING OVERVIEW

	Trainee Initials & Date	LFU Management Initials & Date
Trainee has completed Onboarding training		
Trainee has completed tour of the Consolidated Forensic Laboratory (CFL) and received introduction to disciplines within the Forensic Science Laboratory (FSL).		
Trainee has provided emergency contact information to supervisor		
Trainee has been introduced to the facility and personnel		
Trainee has reviewed the organization and management structure		
Trainee has reviewed the relevant job description		
Trainee has received information related to Union (where applicable)		
The goals of the training program have been explained		
An assessment of Trainee's previous training, experience and education was conducted; ITP has been completed.		
Trainee has met with Agency Director		
Trainee has received an overview of the Quality Assurance program		
Trainee has received Qualtrax login information		
Trainee has received LIMS login information and card, if applicable		
Trainee has received LFU Keys and/or Iris Scan Access, if applicable		

DOCUMENTATION PROVIDED

	Trainee Initials & Date	LFU Management Initials & Date
Trainee has provided management with previous training records		
Trainee has provided management with previous continuing education certificates		

Signatures below represent successful completion of Training Module 3.0.

Trainee Date

Trainer Date

Unit Manager/ (if applicable) Technical Leader Date

4.0 Quality Assurance Program

4.1 Objectives:

- 4.1.1 Quality performance, conforming to recognized standards of good practices both in the field and in the laboratory, is the most important goal within the D.C. Department of Forensic Sciences (DFS). As new and improved methods of analyses are developed to meet the expanding needs of the criminal justice and public health systems, it is essential for quality standards to progress in parallel. The DFS is committed to diligently implementing policy and procedure changes to ensure quality in all facets of DFS operations.

4.2 Reading Material:

- 4.2.1 <https://www.forensicfocus.com/webinars/quality-management-system-standards-in-forensics-an-executive-overview/>
- 4.2.2 <https://what-when-how.com/forensic-sciences/qaqc/>
- 4.2.3 https://www.gossmanforensics.com/newsletter/vol01_iss03.html#:~:text=In%20the%20laboratory%2C%20quality%20assurance,is%20operating%20within%20acceptable%20limits.
- 4.2.4 https://www.researchgate.net/publication/237287165_Chapter_4_QUALITY_ASSURANCE
- 4.2.5 <https://www.testbytes.net/blog/quality-assurance-vs-quality-control/>
- 4.2.6 Open up the Qualtrax program, locate and read **DOM07** - Practices for Quality Corrective Actions (Document Control Number 1275) and **DOM08** - Procedures for Quality Preventive Actions (Document Control Number 1277).
- 4.2.7 Open up Qualtrax program, locate and read the **DFS Quality Policy Statement** (Document Control Number 4864).

4.3 Study/Discussion Questions:

- 4.3.1 Define Quality Assurance.
- 4.3.2 What is a Quality Assurance Program?
- 4.3.3 Why do laboratories need a Quality Assurance Program?
- 4.3.4 What is an Audit?
- 4.3.5 What is the difference between Quality Assurance and Quality Control?

- 4.3.6 Do you need to log into Qualtrax with your user ID and password to view documents?

4.4 Practical Exercises/Skills:

- 4.4.1 View video on the Quality Assurance Program at DFS.
- 4.4.2 The Trainee will receive instruction and demonstration from a member of the Quality unit in the use of Qualtrax, the quality document control system. This may be completed by a series of lectures/presentations and hands-on exercises. Trainee will record notes in training notebook.
- 4.4.3 Under DFS there are three (3) Divisions; navigate Qualtrax and determine the names of the Units under the Division you are assigned to.

4.5 Demonstration of Competency:

- 4.5.1 None

4.6 Documentation:

- 4.6.1 Completion of the tasks in this module will be documented on the checklist titled "Module 4.0 Checklist – Quality Assurance Program".

MODULE 4.0 CHECKLIST Quality Assurance Program

Trainee:	Trainer:	Job Title:
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READING MATERIAL		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has read all the required readings for Module 4.0.		
STUDY/DISCUSSION QUESTIONS		
	Trainee Initials & Date	
Trainee has answered all study/discussion questions for Module 4.0, listed them in training binder, and trainer has reviewed the answers for accuracy.		
PRACTICAL EXERCISES/SKILLS		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the practical exercises in Module 4.0, noted the results in their training binder and results were reviewed by the trainer for accuracy.		

Signatures below represent successful completion of Training Module 4.0.

Trainee Date

Trainer Date

Unit Manager/ (if applicable) Technical Leader Date

5.0 Laboratory Safety

5.1 Objective

- 5.1.1 To develop and demonstrate an understanding of the different hazards that may be encountered while working in the LFU.

5.2 Reading Material:

- 5.2.1 DOM13 – DFS Health and Safety Manual (Document Control Number 1617)
- 5.2.2 DFS SDS Sheets for all chemicals in the FSL Quality Assurance Manual (QAM) (Document Control Number 10164)
- 5.2.3 Standard Operating Procedures (SOPs) for Latent Fingerprint Unit and current DFS administrative policies. Refer to the LFU required readings checklist for additional reading material.

5.3 Study/Discussion Questions:

- 5.3.1 Describe the proper personal protective equipment (PPE) worn while working in the LFU laboratory.
- 5.3.2 What is the laboratory policy on reporting health and safety incidents?

5.4 Practical Exercises/Skills:

- 5.4.1 Review the DFS Health and Safety Training Program and complete Safety Level 1, Safety Level 2 Chemical Hygiene and Bloodborne Pathogen Training.
- 5.4.2 Complete LFU Laboratory Safety walk-through, to include but not limited following:
 - 5.4.2.1 Evacuation process from the facility, including the evacuation routes and meeting place.
 - 5.4.2.2 Locations of fire extinguishers in laboratory, office area, and common areas.
 - 5.4.2.3 Discuss use of fire extinguishers.
 - 5.4.2.4 Provide phone numbers for emergency situations/show the location of phone numbers listed in the laboratory.
 - 5.4.2.5 Locations of First Aid Kits in the laboratory and office areas.
 - 5.4.2.6 Health and safety incident reporting.

- 5.4.2.7 Location of safety equipment, i.e. safety showers, eye wash stations, PPE, fume hoods.
- 5.4.2.8 Discuss the proper use of PPE.
- 5.4.2.9 Location of the Safety Data Sheets (SDS).
- 5.4.2.10 Waste removal process for general lab, biohazard, and hazardous wastes.

5.5 Demonstration of Competency:

- 5.5.1 Study/Discussion questions are answered, included in the Training Binder, and trainer has reviewed the answers for accuracy.
- 5.5.2 Practical Exercises are successfully completed, results in the form of notes and/or photographs (where applicable) are included in Training Binder, and the trainer has reviewed for accuracy and meeting the objectives of the exercise(s).
- 5.5.3 Successful completion of Safety Level 1 and 2, Chemical Hygiene, Bloodborne Pathogen trainings and New Employee Health and Safety Training Checklist.

5.6 Documentation:

- 5.6.1 Completion of the tasks in this module will be documented on the checklist titled "Module 5.0 Checklist- Laboratory Safety".

MODULE 5.0 CHECKLIST

Laboratory Safety

Trainee:	Trainer:	Job Title:
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READING MATERIAL		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has read all the required readings for Module 5.0.		
STUDY/DISCUSSION QUESTIONS		
	Trainee Initials & Date	
Trainee has the ability to answer study/discussion questions for Module 5.0.		
PRACTICAL EXERCISES/SKILLS		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the practical exercises in Module 5.0, noted the results in their training binder and results were reviewed by the trainer for accuracy.		
HEALTH AND SAFETY		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has provided records of hepatitis vaccinations and/or titer or waiver.		
Signed up for Medical Surveillance or opt out		
Completed Health and Safety Training Level 1		
Completed Health and Safety Training Level 2		

Signatures below represent successful completion of Training Module 5.0.

Trainee Date

Trainer Date

Unit Manager/ (if applicable) Technical Leader Date

6.0 History of Fingerprint Identification

6.1 Objective

- 6.1.1 To learn the significance of individuals and events that helped to establish fingerprint identification as a vital aspect of forensic science.

6.2 Reading Material:

- 6.2.1 *Quantitative-Qualitative Friction Ridge Analysis* – David Ashbaugh. Chapters 1, 2
- 6.2.2 *Advances in Fingerprint Technology* – Lee & Gaensslen. Chapter 1
- 6.2.3 *Friction Ridge Skin* – James F. Cowger. Chapter 1
- 6.2.4 *The Fingerprint Sourcebook* – SWGFAST. Chapter 1
- 6.2.5 *Fingerprint Techniques* – Andre Moenssens. Chapter 1

6.3 Study/Discussion Questions:

- 6.3.1 What is the contribution of the following individuals and the significance of the following events/places?
 - 6.3.1.1 Sir William James Herschel
 - 6.3.1.2 Dr. Nehemiah Grew
 - 6.3.1.3 Thomas Bewick
 - 6.3.1.4 Marcello Malpighi
 - 6.3.1.5 J.C.A Mayer
 - 6.3.1.6 Dr. Henry Faulds
 - 6.3.1.7 Johannes Purkinje
 - 6.3.1.8 Edmond Locard
 - 6.3.1.9 Inex Whipple
 - 6.3.1.10 Harris Hawthorne Wilder
 - 6.3.1.11 Juan Vucetich
 - 6.3.1.12 Sir Francis Galton
 - 6.3.1.13 Alphonse Bertillion
 - 6.3.1.14 Sir Edward Richard Henry
 - 6.3.1.15 Rojas murders, 1892
 - 6.3.1.16 Will West
 - 6.3.1.17 Haque & Bose
 - 6.3.1.18 Henry DeForest
 - 6.3.1.19 New York Civil Service Commission, 1902
 - 6.3.1.20 U.S. Penitentiary – Leavenworth, Kansas, 1904
 - 6.3.1.21 St. Louis Police Department, 1904
 - 6.3.1.22 Mary Holland
 - 6.3.1.23 John A. Dondero
 - 6.3.1.24 William Babler
 - 6.3.1.25 Alfred Hale

- 6.3.1.26 Dr. Michio Okajima
- 6.3.1.27 FBI, 1924 and 1933
- 6.3.1.28 Salil Chatterjee
- 6.3.1.29 Harold Cummins
- 6.3.1.30 Inspector John Ferrier
- 6.3.1.31 Roy Huber
- 6.3.1.32 David Ashbaugh
- 6.3.1.33 IAI Resolutions related to the basis for identification
- 6.3.1.34 Incidents that relied on the use of fingerprints to identify victims
 - 6.3.1.34.1 USS Squalus
 - 6.3.1.34.2 1940 Pan Am Airlines

6.4 Practical Exercises/Skills:

- 6.4.1 Based on the information from sections 6.2 and 6.3, build a timeline of individuals and events listed in section 6.3.1. This timeline should be reviewed by the trainer for accuracy. PowerPoint or a similar medium may be used for the basis of the oral board.

6.5 Demonstration of Competency:

- 6.5.1 Study/Discussion questions are answered, included in the Training Binder, and trainer has reviewed the answers for accuracy.
- 6.5.2 Practical Exercises are successfully completed, results in the form of notes and/or photographs (where applicable) are included in Training Binder, and the trainer has reviewed for accuracy and meeting the objectives of the exercise(s).
- 6.5.3 Present historical events within the field of fingerprints at an oral board. Trainee must demonstrate competency through presentation of material and successful completion of question/answer session. Trainee can use the PowerPoint or similar medium to assist them in this oral board. The Trainee must successfully address the following, in detail: the significance of individuals and events that helped to establish fingerprint identification as a vital aspect of forensic science.
- 6.5.4 Successful completion of Written Competency Test.

6.6 Documentation:

- 6.6.1 Completion of the tasks in this module will be documented on the checklist titled "Module 6.0 Checklist- History of Fingerprint Identification".

MODULE 6.0 CHECKLIST

History of Fingerprint Identification

Trainee:	Trainer:	Job Title:
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READING MATERIAL		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has read all the required readings for Module 6.0.		
STUDY/DISCUSSION QUESTIONS		
	Trainee Initials & Date	
Trainee has the ability to answer study/discussion questions for Module 6.0.		
PRACTICAL EXERCISES/SKILLS		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the practical exercises in Module 6.0, noted the results in their training binder and results were reviewed by the trainer for accuracy.		
ORAL BOARD		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the oral board for Module 6.0.		
COMPETENCY TEST		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the written competency test for Module 6.0 (passing score of 80% or greater).		

Signatures below represent successful completion of Training Module 6.0.

Trainee Date

Trainer Date

Unit Manager/ (if applicable) Technical Leader Date

7.0 Biological Uniqueness of Fingerprints

7.1 Objective

- 7.1.1 To have an understanding of the embryology and friction ridge development, anatomy and physiology of friction ridge skin, and the persistence of friction ridge skin.

7.2 Reading Material:

- 7.2.1 *Quantitative-Qualitative Friction Ridge Analysis* – David Ashbaugh. Chapter 3
- 7.2.2 *Advances in Fingerprint Technology* – Lee & Gaensslen. Chapter 3
- 7.2.3 Article, “The Critical Stage of Friction Ridge and Pattern Formation”, by Kasey Wertheim and Alice Maceo
- 7.2.4 *The Fingerprint Sourcebook* – SWGFAST Chapters 2 and 3
- 7.2.5 *Fingerprint Techniques* – Andre Moenssens. Chapters 2, 11 and pages 294-297
- 7.2.6 *Fingerprints and Other Friction Ridge Skin Impression* – Christophe Champod et. Al. Chapter 1
- 7.2.7 Article, “Prenatal Development of Dermatoglyphic Digital Patterns: Associations with Epidermal Ridge, Volar Pad and Bone Morphology” by William J. Babler
- 7.2.8 Article, “Prenatal Selection and Dermatoglyphic Patterns” by William J. Babler
- 7.2.9 Article, “Qualitative Assessment of Skin Deformation: A Pilot Study.” JFI, Vol. 59, No. 4, 2009
- 7.2.10 Article, “Discriminability of Fingerprints of Twins.” JFI, Vol. 58, No. 1, 2008
- 7.2.11 Article, “Fingerprint Patterns: A Study on the Finger and Ethnicity Prioritized Order of Occurrence.” JFI, Vol. 55, No. 4, 2005 – Henry Swofford
- 7.2.12 Article, “Permanent Intentional Fingerprint Mutilation” – Kasey Wertheim
- 7.2.13 Article, “An Extreme Case of Fingerprint Mutilation.” JFI, Vol. 48, No. 4, 1998

- 7.2.14 Article, "Models for Fingerprint Pattern Formation," Kucken, Forensic Science International, Vol. 171, 2007 – optional
- 7.2.15 Article, "The Biology of Skin: Book Report", Maceo Journal of Forensic Identification, 53.5 2003, pages 585-595
- 7.2.16 Article, "Embryologic Development of Epidermal Ridges and Their Configuration", Babler, 1991
- 7.2.17 Article, "Scars in Friction Ridge Skin", Maceo, Evidence Technology Magazine, July-August 2005, Pages 26-28
- 7.2.18 Article, "Morphogenesis of Volar Skin in Human Fetus", Hale, America Journal of Anatomy 1952
- 7.2.19 Article, "Dermal and Epidermal Structures of the Volar Skin" by Michio Okajima

7.3 Study/Discussion Questions:

- 7.3.1 What are the two basic layers of friction ridge skin?
- 7.3.2 Name the five layers of the epidermis in order from inner-most outward.
- 7.3.3 What is the epidermal-dermal junction called?
- 7.3.4 What are the peg-like formations covering the surface of the dermis called?
- 7.3.5 What are the bulbous, transient swellings of mesenchymal tissue under the epidermis of the hands and feet called, and when do they first appear?
- 7.3.6 Histologically, what are the three principal structural elements of skin, which allows for the permanence of friction ridge detail?
- 7.3.7 List the area of the hand where volar pads appear in fetal growth.
- 7.3.8 The onset of cellular proliferation, primary ridge formation first occurs in what three distinct areas?
- 7.3.9 When ridges first begin to form, the overall shape and symmetry of the finger volar pad determines_____.
- 7.3.10 Name the three major secretory glands and where they are primarily located.
- 7.3.11 What is eccrine sweat mainly comprised of?

7.3.12 List some of the main components of sebaceous sweat.

7.3.13 List some of the organic and/or inorganic substances that are present in eccrine sweat.

7.3.14 Define differential growth and how it contributes to biological uniqueness.

7.4 Practical Exercises/Skills:

7.4.1 Based on the information from section 7.2 and 7.3, build a timeline demonstrating how friction ridge skin forms. This timeline should be reviewed by the trainer for accuracy. It will serve as the basis for the oral board but will not be used in the oral board.

7.5 Demonstration of Competency:

7.5.1 Study/Discussion questions are answered, included in the Training Binder, and trainer has reviewed the answers for accuracy.

7.5.2 Practical Exercises are successfully completed, results in the form of notes and/or photographs (where applicable) are included in Training Binder, and the trainer has reviewed for accuracy and meeting the objectives of the exercise(s).

7.5.3 Present about the biological uniqueness of fingerprints at an oral board. Trainee must demonstrate competency through presentation of material and successful completion of question/answer session. Trainee should discuss embryology and friction ridge development, anatomy and physiology of friction ridge skin, and the persistence of friction ridge skin as a lecture.

7.6 Documentation:

7.6.1 Completion of the tasks in this module will be documented on the checklist titled "Module 7.0 Checklist- Biological Uniqueness of Fingerprints".

MODULE 7.0 CHECKLIST

Biological Uniqueness of Fingerprints

Trainee:	Trainer:	Job Title:
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READING MATERIAL		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has read all the required readings for Module 7.0.		
STUDY/DISCUSSION QUESTIONS		
	Trainee Initials & Date	
Trainee has the ability to answer study/discussion questions for Module 7.0.		
PRACTICAL EXERCISES/SKILLS		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the practical exercises in Module 7.0, noted the results in their training binder and results were reviewed by the trainer for accuracy.		
ORAL BOARD		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the oral board for Module 7.0.		

Signatures below represent successful completion of Training Module 7.0.

Trainee Date

Trainer Date

Unit Manager/ (if applicable) Technical Leader Date

8.0 Latent Print Development and Photography Techniques

8.1 Objectives:

- 8.1.1 Understand the difference between latent, patent and plastic prints.
- 8.1.2 Understand the various types of substrates and the properties of the surface area.
- 8.1.3 Understand the use of forensic light sources to locate and visualize latent prints.
- 8.1.4 Understand the techniques for proper lifting and mounting of latent print impressions.
- 8.1.5 Understand the target matrix, development, visualization, limitation, and proper sequencing for chemical processing of latent prints.
- 8.1.6 Understand the proper recognition of potential biological evidence when associated with fingerprint evidence.
- 8.1.7 Understand proper documentation and preservation of developed latent prints.
- 8.1.8 Understand the principles of light, color theory, and macro photography techniques.

8.2 Reading Material:

- 8.2.1 LFU02 – LFU Evidence Processing (Document Control Number 8458)
- 8.2.2 Fisher, B. A. J. & Fisher, D.R. (2003) *Techniques of Crime Scene Investigation*. (8th ed.). Boca Raton, FL: CRC Press. Chapter 6 (pp.103-124)
- 8.2.3 McRoberts, Alan, Ed. *Fingerprint Sourcebook*. National Institute of Justice/NCJRS 225326, 2010. Chapters 7 and 8
- 8.2.4 Miller, R.D. (1995) "Recovery of Useable Fingerprint Patterns from Damaged Postmortem Friction Ridge Skin". *Journal of Forensic Identification*. 45 (6)
- 8.2.5 Ogle, R.R. (2012) *Crime Scene Investigation and Reconstruction*. (3rd ed.). Boston, MA; Prentice Hall. Chapter 5: pp. 126-156
- 8.2.6 Saferstein, R. (2011). *Criminalistics: An Introduction to Forensic Science*. (10th ed.). Boston, MA: Prentice Hall Pp 400-410

- 8.2.7 Siegel, J.A. & Mirakovits, K. (2010) *Forensic Science: The Basics*. (2nd ed.). Boca Raton, FL; CRC Press. Ch. 7 (pp 146-163)
- 8.2.8 SWGFAST Document #6, *Standard for Friction Ridge Impression Digital Imaging*. Can find online
- 8.2.9 Trozzi, TA., Schwartz, RL., Hollars, ML. (2000). *Processing Guide for Developing Latent Prints*. U.S. Dept. of Justice, FBI Laboratory Division: Washington, D.C. (section on sequencing).
- 8.2.10 Voss-De Haan, P. (2006). Physics and Fingerprints. *Contemporary Physics*. Vol. 47(4), pp. 209-230
- 8.2.11 Champod, C. *Fingerprints and Other Ridge Skin Impressions*. 2004. Chapter 3 and 4, Appendix 3 and 4
- 8.2.12 Herlihy, Agarwal and Reitnauer. "A Comparative Study of the Development of Blood Impressions on Dark-Colored Substrates Using Phloxine B and Acid Yellow 7". *Fingerprint Whorld, The International Journal of The Fingerprint Society*. July 2010. Vol. 36 No. 140.
- 8.2.13 IAI latent print sequencing guidelines.
<http://www.cbdi.ai.org/Reagents/start.html>
- 8.2.14 Lee, HC., Gaensslen, R.E., eds. (2001). *Advances in Fingerprint Technology* (2nd ed.) Washington, D.C.: CRC Press. Chapters 4 – 6.
- 8.2.15 Menzel, ER., Barttsch, RA., Hallman, J. "Fluorescent Metal-Ruhemann's Purple Coordination Compounds: Applications to Latent Fingerprint Detection". *JOFS*, Vol. 35(1), 1990, pp. 25-34.
- 8.2.16 Reitnauer, A. and Lahm, C. "The Use of Colored Barrier Filters in Forensic Photography". *Fingerprint Whorld, The International Journal of The Fingerprint Society*. October, 2015. Vol. 40 No. 158.
- 8.2.17 Sodhi, GS., Kaur, J. "Powder Method for Detecting latent Fingerprints: A Review". *For.Sci.Int.*, 2001, Vol. 120 (3), pp. 172 – 176.
- 8.2.18 Wargacki, SP., Lewis, LA., Dadum, MD. "Understanding the Chemistry of the Development of Latent Fingerprints by Superglue Fuming". *JOFS*, Vol. 52(5), pp. 1057-1062.
- 8.2.19 Factors Affecting the Recovery of Latent Prints on Firearms and Latent Print Examination of Firearms Evidence-PowerPoint

8.3 Study/Discussion Questions:

- 8.3.1 What are the major components of fingerprint residues, and why do certain processing techniques react better (chemically) to certain latent prints? Briefly describe the various approaches that have been developed to process latent prints utilizing the features of these residues/components.
- 8.3.2 Describe how you would process “plastic fingerprints” at a crime scene.
- 8.3.3 Describe different conditions that could affect the quality of latent prints.
- 8.3.4 Explain the suggested general processing sequence for non-porous materials.
- 8.3.5 Explain the suggested general processing sequence for porous materials.
- 8.3.6 How would you process a semi-porous item, such as a magazine?
- 8.3.7 Describe how to properly mark and package lifted latent prints per SOPs.
- 8.3.8 Discuss fluorescence in terms of latent print development techniques.
- 8.3.9 Describe a processing technique to develop latent impressions on dark-colored paper?
- 8.3.10 Describe the processing sequence for gray-colored duct tape.
- 8.3.11 What are the criteria for the use of Small Particle Reagent?
- 8.3.12 Ninhydrin reacts with which component of the latent fingerprint residue?
- 8.3.13 A ninhydrin formulation that uses a Freon solvent (or Freon replacement solvent, HFE-7100) reduces which problem when processing porous materials?
- 8.3.14 What is the catalyst for the accelerated development of silver nitrate?
- 8.3.15 Discuss why latent impressions developed with Iodine must be photographed quickly.
- 8.3.16 What is the purpose of humidifying the atmosphere when using the cyanoacrylate chamber?
- 8.3.17 Describe the mechanism by which the cyanoacrylate polymerizes with the latent print.
- 8.3.18 What hazards are present when processing with cyanoacrylate? What happens at 400 degrees Fahrenheit?

- 8.3.19 Discuss three (3) blood impression enhancement techniques utilized by the latent print processing lab.
- 8.3.20 What is the importance of 5-Sulfosalicylic Acid?
- 8.3.21 Describe the mechanism by which powder processing is used to develop a latent print.
- 8.3.22 What wavelength/barrier filter combo should be used to visualize Rhodamine 6G dye-stained latent prints?
- 8.3.23 What is RAM, and how is it visualized?
- 8.3.24 Describe the process used for taking inked prints of the deceased. Be thorough, and list all possibilities.
- 8.3.25 Define depth of field, and explain why it is important for latent print photography.
- 8.3.26 What is the NIST recommended resolution for latent impressions and tenprint impressions used for comparison?
- 8.3.27 What is the best lighting technique that should be used to minimize a glare?
- 8.3.28 Describe the various lighting systems in macro photography for latent impressions.
- 8.3.29 Describe color wheel theory as it pertains to the application of light and barrier filters.
- 8.3.30 What is RUVIS, and how does it operate?
- 8.3.31 When comparing a latent impression that was lifted using a gel lift or opaque Mikrosil/Accutrans, what must first be done to the impression?

8.4 Practical Exercises/Skill:

8.4.1 Equipment/Instrumentation

- 8.4.1.1 Receive instruction from qualified LFU personnel using lectures/presentations and/or hands-on exercises about the functions and proper operations of the following equipment:

- 8.4.1.1.1 All cyanoacrylate chambers
- 8.4.1.1.2 Humidity chambers
- 8.4.1.1.3 SPEX alternate light sources
- 8.4.1.1.4 Foster and Freeman alternate light sources
- 8.4.1.1.5 Forensic Laser

- 8.4.1.1.6 RUVIS
- 8.4.1.1.7 Flatbed Scanner
- 8.4.1.1.8 Downdraft powder stations
- 8.4.1.1.9 Digital camera
- 8.4.1.1.10 DCS5 Software
- 8.4.1.1.11 Mideo LatentWorks

8.4.2 Non-Porous Evidence

- 8.4.2.1 Receive instruction and demonstration from qualified LFU personnel using lectures/presentations and/or hands-on exercises, and successfully complete the following tasks:

- 8.4.2.1.1 Conduct a number of experiments depositing your fingerprints on non-porous surfaces, and practice developing latent impressions on these items utilizing the sequential application of reagents.
- 8.4.2.1.2 These items will be sequentially processed with Cyanoacrylate Fuming, Fluorescent Dye Stains, Sudan Black, Small Particle Reagent, and traditional fingerprint powders and lifting mechanisms.

8.4.3 Porous Evidence

- 8.4.3.1 Receive instruction and demonstration from qualified LFU personnel using lectures/presentations and/or hands-on exercises, and successfully complete the following tasks:

- 8.4.3.1.1 Conduct a number of experiments depositing your fingerprints on porous surfaces, and practice developing latent impressions on these items utilizing the sequential application of reagents.
- 8.4.3.1.2 These items will be sequentially processed with Iodine Fuming, 1,2 Indanedione, Ninhydrin, Zinc Chloride, Oil Red O, and Silver Nitrate.

8.4.4 Semi-Porous Evidence

- 8.4.4.1 Receive instruction and demonstration from qualified LFU personnel using lectures/presentations and/or hands-on exercises, and successfully complete the following tasks:

- 8.4.4.1.1 Conduct a number of experiments depositing your fingerprints on semi-porous surfaces, and practice

developing latent impressions on these items utilizing the sequential application of reagents.

- 8.4.4.1.2 These items may be sequentially processed with Cyanoacrylate Fuming, 1,2 Indanedione, Ninhydrin, WetWop, Small Particle Reagent, Fluorescent Dye Stains, Zinc Chloride, Traditional Fingerprint Powders and lifting mechanisms.

8.4.5 Adhesive Surfaces and Special Considerations

- 8.4.5.1 Receive instruction and demonstration from qualified LFU personnel using lectures/presentations and/or hands-on exercises, and successfully complete the following tasks:

- 8.4.5.1.1 Conduct a number of experiments depositing your fingerprints on adhesive surfaces and surfaces requiring special considerations, and practice developing latent impressions on these items utilizing the sequential application of reagents.

- 8.4.5.1.2 These items may be sequentially processed with Cyanoacrylate Fuming, Fluorescent Dye Stains, Gentian Violet, Sticky-Side Powder, WetWop, 1,2 Indanedione, Ninhydrin, Silver Nitrate, Small Particle Reagent, and traditional fingerprint powders.

8.4.6 Blood Reagents

- 8.4.6.1 Receive instruction and demonstration from qualified LFU personnel using lectures/presentations and/or hands-on exercises, and successfully complete the following tasks:

- 8.4.6.1.1 Conduct a number of experiments depositing your fingerprints on non-porous and porous surfaces, and practice developing latent impressions on these items utilizing the sequential application of reagents.

- 8.4.6.1.2 These items may be sequentially processed with Amido Black, Leucocrystal Violet, Hungarian Red, Acid Yellow 7, 5-SSA, 1,2 Indanedione, and Ninhydrin.

8.4.7 Overall and Macro Photography

- 8.4.7.1 Trainee will be instructed by qualified personnel in the various principles and lighting systems of photography through instruction and hands-on practical exercises. Instruction shall include use of light, visualization, photographic principles, relationship of aperture/ISO/shutter speed, color wheel theory, use of ALS and barrier filters, and various external light sources.
- 8.4.7.2 Trainee will produce examination quality photographs under various conditions, utilizing a number of light sources and filter combinations.
- 8.4.7.3 Trainee will also be instructed by qualified personnel in the acquisition of images into Mideo LatentWorks and the creation of cases in the CaseWorks platform.

8.4.8 Known Prints

- 8.4.8.1 Receive instruction and demonstration from qualified personnel using lectures/presentations and/or hands-on exercises, and successfully complete the following tasks:
 - 8.4.8.1.1 Elimination Prints – Practice rolling elimination prints. Conduct at least 5 complete print sets, including ten prints, palms, and major case impressions. Review deficiencies or areas of improvement needed via trainer or fingerprint examiner. Record originals in training binder.
 - 8.4.8.1.2 Post-mortem Prints – Observe post-mortem prints being taken in OCME and if possible, practice recording them.

- 8.4.9 Upon successful completion of the exercises listed in 8.4.1-8-4.8, the Trainee may shadow a senior evidence processing analyst to understand the components of the latent print processing case file, examination process, and documentation.

8.5 Demonstration of Competency:

- 8.5.1 Study/Discussion Questions are answered, included in Training Binder, and trainer has reviewed the answers for accuracy.
- 8.5.2 Practical Exercises are successfully completed, results in the form of notes and/or photographs (where applicable) are included in Training Binder, and the trainer has reviewed for accuracy and meeting objectives of the exercise(s).

8.5.3 Successful completion of the Practical Competency Test.

8.5.4 Trainee must demonstrate competency through presentation of material and successful completion of question/answer session at an oral board. Trainee should discuss the difference between latent, patent, and plastic prints; the various types of substrates and the properties of the surface area; the use of forensic light sources to locate and visualize latent prints; techniques for proper lifting and mounting of latent print impressions; the target matrix, development, visualization, limitation, and proper sequencing for chemical processing of latent prints; proper recognition of potential biological evidence when associated with fingerprint evidence; proper documentation and preservation of developed latent prints; and the principles of light, color theory, and macro photography techniques.

8.6 Documentation:

8.6.1 Completion of the tasks in this module will be documented on the checklist titled "Module 8.0 Checklist- Latent Print Development and Photography Techniques."

MODULE 8.0 CHECKLIST

Latent Print Development and Photography Techniques

Trainee:	Trainer:	Job Title:
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READING MATERIAL		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has read all the required readings for Module 8.0.		
STUDY/DISCUSSION QUESTIONS		
	Trainee Initials & Date	
Trainee has the ability to answer study/discussion questions for Module 8.0.		
PRACTICAL EXERCISES/SKILLS		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the practical exercises in Module 8.0, noted the results in their training binder and results were reviewed by the trainer for accuracy.		
COMPETENCY EXAM		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully passed the practical competency test for Module 8.0 with a passing score of 80 or above.		
ORAL BOARD		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the oral board for Module 8.0.		

Signatures below represent successful completion of Training Module 8.0.

Trainee Date

Trainer Date

Unit Manager/ (if applicable) Technical Leader Date

9.0 Processing Using Adobe Photoshop

9.1 Objectives:

- 9.1.1 To obtain an understanding of the Adobe Photoshop Imaging Platform and the techniques utilized for the enhancement of digital images for examination purposes.

9.2 Reading Material:

- 9.2.1 Standard Operation Procedures: LFU05 – Imaging of Latent Prints (Document Control Number 1382), LFU11 – Handling and Processing of Digital Examination Quality Images (Document Control Number 3343)
- 9.2.2 Osborn, Scott and Wilson, Kerry. “Digital Enhancement of Latent Prints Using Adobe Photoshop Black & White Adjustments”. *Jour. For. ID.* 59 (4). 2009.
- 9.2.3 Smith, Jill. “Computer Fingerprint Enhancement: The Joy of Lab Color”. *Jour. For. ID.* 62 (5). 2012.
- 9.2.4 Loll, Allison. “Understanding Digital Enhancement Processes”. *Jour. For. ID.* 66 (1) 2016.

9.3 Study/Discussion Questions:

- 9.3.1 What are the various digital image file formats?
- 9.3.2 What is compression, and how does it affect the image?
- 9.3.3 Discuss the importance of image resolution, and describe the requirements for examination-quality images.
- 9.3.4 What is image metadata?
- 9.3.5 What are dodge and burn? Can these techniques be used on a latent print image? Why or why not?
- 9.3.6 Describe “Curves” and how it is used on a latent print image.
- 9.3.7 Discuss the importance of contrast in a digital image.
- 9.3.8 What is Lab Color and on what latent print processing technique is it effective on?
- 9.3.9 Discuss the enhancement technique of “black & white”.
- 9.3.10 Describe how you would calibrate a digital image to a 1:1 format.

- 9.3.11 Describe how you would enhance a ninhydrin print on a red and blue label.

9.4 Practical Exercises/Skills:

- 9.4.1 Receive instruction and demonstration from a qualified LFU Examiner using lectures/presentations and/or hands-on exercises, and successfully complete the following tasks:

- 9.4.1.1 Enhance 20 digital images and provide the history log.

- 9.4.1.2 Calibrate 20 images to a 1:1 format.

9.5 Demonstration of Competency:

- 9.5.1 Study/Discussion Questions are answered, included in Training Binder, and trainer has reviewed the answers for accuracy.

- 9.5.2 Practical Exercises are successfully completed, results in the form of notes and/or photographs (where applicable) are included in Training Binder, and the trainer has reviewed for accuracy and meeting the objectives of the exercise(s).

- 9.5.3 Successful completion of the Practical Competency Test.

9.6 Documentation:

- 9.6.1 Completion of the tasks in this module will be documented on the checklist titled "Module 9.0 Checklist- Processing Using Adobe Photoshop".

MODULE 9.0 CHECKLIST

Processing Using Adobe Photoshop

Trainee:	Trainer:	Job Title:
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READING MATERIAL		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has read all the required readings for Module 9.0.		
STUDY/DISCUSSION QUESTIONS		
	Trainee Initials & Date	
Trainee has the ability to answer study/discussion questions for Module 9.0.		
PRACTICAL EXERCISES/SKILLS		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the practical exercises in Module 9.0, noted the results in their training binder and results were reviewed by the trainer for accuracy.		
COMPETENCY EXAM		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully passed the practical competency test for Module 9.0 with a passing score of 80 or above.		

Signatures below represent successful completion of Training Module 9.0.

Trainee Date

Trainer Date

Unit Manager/ (if applicable) Technical Leader Date

10.0 Evidence Handling and Chain of Custody

10.1 Objectives:

- 10.1.1 To understand the importance of the handling and packaging of evidence, as well as LIMS and Chain of Custody concepts.

10.1 Reading Material:

- 10.1.1 FSL Quality Assurance Manual (QAM) (Document Control Number 10164)
- 10.1.2 Standard Operating Procedures: LFU01 – SOP Handling of Evidence for Friction Ridge Analysis (Document Control Number 1378), LFU07 – Deceased Cases (Document Control Number 1384), and LFU08 – SOP for Elimination Prints (Document Control Number 1385).

10.2 Study/Discussion Questions:

- 10.2.1 What is the importance of Chain of Custody, and how is it maintained?
- 10.2.2 Describe the proper packaging of a porous item, non-porous item, and decedent exemplar impressions.
- 10.2.3 Discuss the proper itemization sequence in LIMS, as utilized by the Latent Fingerprint Unit.
- 10.2.4 Who is responsible for the Chain of Custody on evidentiary items?

10.3 Practical Exercises/Skills:

- 10.3.1 Receive instruction and demonstration from a qualified senior LFU Examiner using lectures/presentations and/or hands-on exercises, and successfully perform the transfer of evidence for a minimum of 25 items.

10.4 Demonstration of Competency:

- 10.4.1 Study/Discussion Questions are answered, included in Training Binder, and trainer has reviewed the answers for accuracy.
- 10.4.2 Practical Exercises are successfully completed, results in the form of notes and/or photographs (where applicable) are included in Training Binder, and the trainer has reviewed for accuracy and meeting the objectives of the exercise(s).

10.5 Documentation:

- 10.5.1 Completion of the tasks in this module will be documented on the checklist titled "Module 10.0 Checklist- Evidence Handling and Chain of Custody".

MODULE 10.0 CHECKLIST

Evidence Handling and Chain of Custody

Trainee:	Trainer:	Job Title:
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READING MATERIAL		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has read all the required readings for Module 10.0.		
STUDY/DISCUSSION QUESTIONS		
	Trainee Initials & Date	
Trainee has the ability to answer study/discussion questions for Module 10.0.		
PRACTICAL EXERCISES/SKILLS		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the practical exercises in Module 10.0, noted the results in their training binder and results were reviewed by the trainer for accuracy.		

Signatures below represent successful completion of Training Module 10.0.

Trainee Date

Trainer Date

Unit Manager/ (if applicable) Technical Leader Date

11.0 Friction Ridge Analysis and Comparison

11.1 Objectives:

- 11.1.1 To be able to interpret fingerprint patterns, ridge flows, anatomical origins and orientation of different types of friction ridge skin, including palm prints and joints.
- 11.1.2 Have a basic understanding of different classification systems.
- 11.1.3 Learn to evaluate latent impressions to determine value using qualitative and quantitative criteria.
- 11.1.4 Learn to conduct latent print comparisons and render proper conclusions.

11.2 Reading Material:

- 11.2.1 *Quantitative-Qualitative Friction Ridge Analysis* – David Ashbaugh, Chapter 4, 5, 6, 7, and 8
- 11.2.2 *Fingerprints and Other Ridge Skin Impressions* - Champod, C., Chapter 2
- 11.2.3 *Fingerprint Techniques* by Andre Moenssens, Chapters 3, 7, and 8
- 11.2.4 *Scott's Fingerprint Mechanics* – Olsen, R.D., Pages 24-46
- 11.2.5 *Friction Ridge Skin: Comparison and Identification of Fingerprints* Cowger, J.F. Pages 58-70, 152-172, 172-206
- 11.2.6 *The Science of Fingerprints* by FBI, Chapters 2, 3-5 and 8
- 11.2.7 *Fingerprint Training Manual* by FBI
- 11.2.8 *The Fingerprint Sourcebook*, Chapter 5, 9
- 11.2.9 *Advances in Fingerprint Technology* – Lee, H. & Gaensslen, R., Chapter 2
- 11.2.10 *Forensic Science: An Introduction to Criminalistics* – DeForest, P., Gaensslen, R., Lee, H., Pages 349-353
- 11.2.11 LFU04 – SOP Examination of Latent Print Evidence (Document Control Number 1381), mainly section 7.4 to understand FSL LFU standard conclusions – will use these while performing practical exercises.

11.2.12 LFU11 – Handling and Processing of Digital Examination Quality Images (Document Control Number 3343) and LFU12 – Mideo LatentWorks SOP (Document Control Number 10250). Read before beginning comparison exercises. Trainee will be expected to start using these tools to prepare them for casework.

11.3 Study/Discussion Questions:

11.3.1 What are the 8 types of fingerprint patterns?

11.3.2 What are the differences between each type of loop, arch and whorl?

11.3.3 What are the 3 levels of detail, and how are they used to evaluate a latent impression?

11.3.4 Be able to thoroughly explain how the accepted methodology of ACE-V is applied.

11.3.5 What are the 3 regions of the palm, and where are they located?

11.3.6 What are the four major regions of the foot, and where are they located?

11.3.7 Name the deltas that can be found in a palm print and where they are located.

11.3.8 Name the major creases of the palm and where they are located.

11.3.9 List the definition of the following terms and how they influence latent print deposits and subsequent development appearance – substrate distortion, matrix distortion, development medium, pressure distortion, deposition pressure, color/tonal reversal, position/lateral reversal.

11.3.10 Explain quality/quantity as it applies to latent prints.

11.3.11 What are some of the early methods used for comparison other than the side-by-side method?

11.3.12 Can creases, pores, and ridge edges be used to establish identification?

11.3.13 Can scars be used to establish identification?

11.3.14 Can a positive identification be made by pattern type alone?

11.3.15 Is there a valid scientific basis for requiring a minimum number of ridge characteristics which must be present in two fingerprints to establish a positive identification? Explain.

11.4 Practical Exercises/Skills:

11.4.1 Receive instruction and demonstration from a qualified LFU Examiner using lectures/presentations and/or hands-on exercises, and successfully complete the following tasks:

11.4.1.1 Interpret fingerprint patterns present on fingerprint standards.

11.4.1.2 Perform the Latent Print Distortion exercise to interpret distortional factors and appearance.

11.4.1.3 Assess a variety of latent impressions including fingerprints, joint fingerprints, tip fingerprints, palm prints, footprints, and non-friction ridge skin determine value, orientation and anatomical origin.

11.4.1.4 Conduct an analysis and articulation of a minimum of 20 latent impressions, designating observations, and annotating using the confidence-based GYRO color system.

11.4.1.5 Conduct a series of comparisons, using provided exercises, of latent impressions (usually lifts from powdered prints) with known inked prints for exclusion, identification and/or inconclusive.

11.4.1.5.1 These exercises replicate real casework and should be completed independently; however, limited consultations may be permitted to assist the Trainee with especially difficult comparisons. Technical errors that occur in the exercises, such as erroneous identifications or erroneous exclusions, may require the Examiner to complete retraining in specific areas and/or complete additional exercises to ensure competency before moving on to future exercises.

11.4.1.6 Practice conducting evaluations and comparisons of chemically developed latent prints with known inked prints – practice conducting on-screen comparisons of digital reproductions.

11.4.2 Review Exercises in *FBI Fingerprint Training Manual*.

11.5 Demonstration of Competency:

11.5.1 Study/Discussion Questions are answered, included in Training Binder, and trainer has reviewed the answers for accuracy.

11.5.2 Practical Exercises are successfully completed, results in the form of notes and/or photographs (where applicable) are included in Training Binder, and the trainer has reviewed for accuracy and meeting the objectives of the exercise(s).

11.5.3 Successful completion of Practical Competency Test.

11.5.3.1 The comparison competency test requires a score of 100% to successfully pass.

11.5.4 Trainee must demonstrate competency through presentation of material and successful completion of question/answer session at an oral board. Trainee should refrain from using notes during the oral board and be able to describe fingerprint patterns, ridge flows, anatomical origins and orientation of different types of friction ridge skin, including palm prints and joints. Have a basic understanding of different classification systems and how to evaluate latent impressions to determine value using qualitative and quantitative criteria. Trainee should also discuss how to conduct latent print comparisons and render proper conclusions.

11.6 Documentation:

11.6.1 Completion of the tasks in this module will be documented on the checklist titled "Module 11 Checklist- Friction Ridge Analysis and Comparison."

MODULE 11.0 CHECKLIST

Friction Ridge Analysis and Comparison

Trainee:	Trainer:	Job Title:
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READING MATERIAL		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has read all the required readings for Module 11.0.		
STUDY/DISCUSSION QUESTIONS		
	Trainee Initials & Date	
Trainee has the ability to answer study/discussion questions for Module 11.0.		
PRACTICAL EXERCISES/SKILLS		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the practical exercises in Module 11.0, noted the results in their training binder and results were reviewed by the trainer for accuracy.		
COMPETENCY EXAM		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully passed the practical competency test for Module 11.0 with a passing score of 100%.		
ORAL BOARD		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the Oral Board for Module 11.0.		

Signatures below represent successful completion of Training Module 11.0.

Trainee Date

Trainer Date

Unit Manager/ (if applicable) Technical Leader Date

12.0 Automated Fingerprint Identification System (AFIS)

12.1 Objectives:

- 12.1.1 To understand the functionality, acquisition, and search function of the available Automated Fingerprint Identification System (AFIS).

12.2 Reading Material:

- 12.2.1 LFU06 – SOP for Automated Fingerprint Identification System (AFIS) (Document Control Number 1383)
- 12.2.2 MorphoTrak AFIS Manuals and User Guides.
- 12.2.3 *Fingerprint Sourcebook*, Chapter 6
- 12.2.4 NIST Special Publication 1151; Markup Instructions for Extended Friction Ridge Features

12.3 Study/Discussion Questions

- 12.3.1 None

12.4 Practical Exercises/Skills:

- 12.4.1 The trainer will work with the Trainee to introduce AFIS and Next Generation Identification (NGI) capabilities.
- 12.4.2 The trainee will be required to assist the trainer with AFIS entries and complete independent submissions. Trainee will enter a minimum of 20 latents under the direction/supervision of their trainer.
- 12.4.3 The trainee must complete a written paper with a minimum of 3 pages, 12 font, double spaced, focusing on the capabilities of AFIS.
- 12.4.4 Additionally, the trainer should provide the trainee with comparison exercises to enhance the learning from Module 11.0.

12.5 Demonstration of Competency:

- 12.5.1 Practical Exercises are successfully completed, results in the form of notes and/or photographs (where applicable) are included in Training Binder, and the trainer has reviewed for accuracy and meeting the objectives of the exercise(s).
- 12.5.2 Trainee must demonstrate competency through presentation of material and successful completion of question/answer session at an oral board. Trainee should refrain from using notes during the oral board and be able to describe the functionality, acquisition, and search function of the AFIS.

12.6 Documentation:

- 12.6.1 Completion of the tasks in this module will be documented on the checklist titled "Module 12.0 Checklist- Automated Fingerprint Identification System (AFIS)".

MODULE 12.0 CHECKLIST

Automated Fingerprint Identification System (AFIS)

Trainee:	Trainer:	Job Title:
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READING MATERIAL		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has read all the required readings for Module 12.0.		
PRACTICAL EXERCISES/SKILLS		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the practical exercises in Module 12.0, noted the results in their training binder and results were reviewed by the trainer for accuracy.		
ORAL BOARD		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the Oral Board for Module 12.0.		

Signatures below represent successful completion of Training Module 12.0.

Trainee Date

Trainer Date

Unit Manager/ (if applicable) Technical Leader Date

13.0 Case Notes and Report Writing in the Laboratory Information Management System (LIMS)

13.1 Objectives:

- 13.1.1 To understand the importance of case file documentation, digital annotations, and the documentation of findings in LIMS.

13.2 Reading Material:

- 13.2.1 FSL Quality Assurance Manual (QAM) (Document Control Number 10164)
- 13.2.2 Standard Operating Procedures: LFU03 – SOP Latent Print Case File (Document Control Number 1380), LFU09 – SOP for Latent Fingerprint Unit Report of Results (Document Control Number 1386).

13.3 Study/Discussion Questions:

- 13.3.1 Discuss the various types of examination/case notes and their role in discovery.

13.4 Practical Exercises/Skills:

- 13.4.1 Receive instruction and demonstration from a qualified LFU Examiner using lectures/presentations and/or hands-on exercises about the documentation process.
- 13.4.2 Review Latent Fingerprint Unit notes and reporting documents with trainer by reviewing worksheets/case notes and various case file reports (minimum of 20 cases).

13.5 Demonstration of Competency:

- 13.5.1 Study/Discussion Questions are answered, included in Training Binder, and trainer has reviewed the answers for accuracy.
- 13.5.2 Practical Exercises are successfully completed, results in the form of notes and/or photographs (where applicable) are included in Training Binder, and the trainer has reviewed for accuracy and meeting the objectives of the exercise(s).
- 13.5.3 Trainee must present at an oral board. The trainer will provide the trainee with a mock case to work. The trainee will work the case, as if it was their own, producing processed evidence, case notes, report of examination, etc. The trainee will provide the members of the oral board with copies of all case notes and prepare an oral board to explain how the case was

received, how it was processed, the process/workflow for working a case, case notes, and their report.

13.6 Documentation:

- 13.6.1 Completion of the tasks in this module will be documented on the checklist titled "Module 13.0 Checklist- Case Notes and Report Writing in the Laboratory Information Management System (LIMS)".

MODULE 13.0 CHECKLIST
Case Notes and Report Writing in the Laboratory Information
Management System (LIMS)

Trainee:	Trainer:	Job Title:
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READING MATERIAL		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has read all the required readings for Module 13.0.		
STUDY/DISCUSSION QUESTIONS		
	Trainee Initials & Date	
Trainee has the ability to answer study/discussion questions for Module 13.0.		
PRACTICAL EXERCISES/SKILLS		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the practical exercises in Module 13.0, noted the results in their training binder and results were reviewed by the trainer for accuracy.		
ORAL BOARD		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the Oral Board for Module 13.0.		

Signatures below represent successful completion of Training Module 13.0.

Trainee Date

Trainer Date

Unit Manager/ (if applicable) Technical Leader Date

14.0 Quality Assurance and Verification Procedures

14.1 Objectives:

- 14.1.1 To understand the principles of Quality Assurance and the process of verification within latent print examination.

14.2 Reading Material:

- 14.2.1 FSL Quality Assurance Manual (QAM) (Document Control Number 10164)
- 14.2.2 Standard Operating Procedure: LFU04 – SOP Examination of Latent Print Evidence (Document Control Number 1381)
- 14.2.3 Black, John P. “Is There a Need for 100% Verification (Review) of Latent Print Examination Conclusions?”. *J For ID*. Vol. 62. Issue 1. 201.
- 14.2.4 Office of the Inspector General. *A Review of the FBI’s Handling of the Brandon Mayfield Case*. March 2006.
- 14.2.5 LFU Verification Memo (Document Control Number 4640)
- 14.2.6 Guiding Principles of Professional Responsibility for Crime Laboratories and Forensic Scientists. 2011 (Document Control Number 8270).
- 14.2.7 Current ISO 17025 Standards in Qualtrax

14.3 Study/Discussion Questions

- 14.3.1 None

14.4 Practical Exercises/Skills:

- 14.4.1 Discuss with the trainer the principles of Quality Assurance under the criteria of ISO 17025 and the Department of Forensic Sciences.
- 14.4.2 Receive instruction and demonstration from a qualified LFU Examiner using lectures/presentations and/or hands-on exercises, and successfully complete the following task:
 - 14.4.2.1 Perform an independent verification of a minimum of 5 cases involving a previously reported Identification and 5 cases involving “No Value” decisions.
- 14.4.3 Discussion with trainer/designee concerning conflict resolution.

14.5 Demonstration of Competency:

- 14.5.1 Practical Exercises are successfully completed, results in the form of notes and/or photographs (where applicable) are included in Training Binder, and the trainer has reviewed for accuracy and meeting the objectives of the exercise(s).

14.6 Documentation:

- 14.6.1 Completion of the tasks in this module will be documented on the checklist titled "Module 14.0 Checklist- Quality Assurance and Verification Procedures".

MODULE 14.0 CHECKLIST

Quality Assurance and Verification Procedures

Trainee:	Trainer:	Job Title:
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READING MATERIAL		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has read all the required readings for Module 14.0.		
PRACTICAL EXERCISES/SKILLS		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the practical exercises in Module 14.0, noted the results in their training binder and results were reviewed by the trainer for accuracy.		

Signatures below represent successful completion of Training Module 14.0.

Trainee Date

Trainer Date

Unit Manager/ (if applicable) Technical Leader Date

15.0 Technical/Administrative Review

15.1 Objectives:

- 15.1.1 Develop and demonstrate an understanding of how to properly conduct technical and/or administrative reviews in accordance with the requirements of the Forensic Science Laboratory (FSL) Quality Assurance Manual (Document Control Number 10164).

15.2 Reading Material:

- 15.2.1 FSL Quality Assurance Manual (QAM) (Document Control Number 10164)
- 15.2.2 Latent Fingerprint Unit Technical Review Form (Document Control Number 2112)
- 15.2.3 LFU Administrative Review Form (Document Control Number 12378)
- 15.2.4 *Fingerprint Sourcebook*, Chapter 12.

15.3 Study/Discussion Questions:

- 15.3.1 Define technical review.
- 15.3.2 Who is authorized to conduct a technical review?
- 15.3.3 Define administrative review.
- 15.3.4 Who is authorized to conduct an administrative review?

15.4 Practical Exercises/Skills:

- 15.4.1 Receive instruction and demonstration from a qualified individual(s) in the administrative and/or technical review process of casework reports and documents in accordance with laboratory policy. This may be completed by a series of lectures/presentations and hands-on exercises. Trainee will record notes in training notebook.
- 15.4.2 As applicable, trainee must conduct 5-10 supervised administrative reviews on case files and documents consisting of various types and complexities routinely performed by the LFU. Reviews will be documented on the "Supervised Technical/Administrative Review Worksheet" (Document Control Number 13202).
- 15.4.3 As applicable, trainee must conduct 5 - 10 supervised technical reviews on case files and core binders consisting of various types and

complexities routinely performed by LFU. Reviews will be documented on the "Supervised Technical/Administrative Review Worksheet" (Document Control Number # 13202).

Note: Throughout the training program, the Trainee is expected to gather case notes and reports of qualified individuals to use as examples for learning how to take case notes and write reports of their own. Throughout the training program, the Trainee should also use reports for practice on technical and administrative reviews. Reviews and any questions regarding developing case notes, writing reports, and the technical and administrative review process should be discussed with Trainer(s). As the Trainee progress through training, their knowledge and ability to work independently with case notes, report writing and conducting reviews should increase.

15.5 Demonstration of Competency:

15.5.1 The Trainee must successfully complete an unsupervised administrative review competency test prior to approval to perform independent administrative reviews.

15.5.2 The Trainee must successfully complete an unsupervised technical review competency test prior to approval to perform independent technical reviews.

15.6 Documentation:

15.6.1 Completion of the tasks in this module will be documented on the checklist titled "Module 15.0 Checklist –Technical/Administrative Review".

MODULE 15.0 CHECKLIST Technical/Administrative Review

Trainee:	Trainer:	Job Title:
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READING MATERIAL		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has read all the required readings for Module 15.0.		
STUDY/DISCUSSION QUESTIONS		
	Trainee Initials & Date	
Trainee has the ability to answer study/discussion questions for Module 15.0.		
PRACTICAL EXERCISES/SKILLS		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the practical exercises for administrative review in Module 15.0, noted the results in their training binder, and results were reviewed by the trainer for accuracy.		
COMPETENCY TEST		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the administrative review competency test for Module 15.0.		
Trainee has successfully completed the technical review competency test for Module 15.0.		

Signatures below represent successful completion of Training Module 15.0.

Trainee Date

Trainer Date

Unit Manager/ (if applicable) Technical Leader Date

16.0 Legal Overview/Expert Testimony/Mock Trial

16.1 Objectives:

- 16.1.1 To gain familiarity with courtroom etiquette and to gain experience in presenting scientific results in accurate but non-technical terms in a court of law.
- 16.1.2 The Trainee should have an understanding of the principles of courtroom etiquette and presentation of evidence, which may include but are not limited to the following:
 - 16.1.2.1 Courtroom demeanor and attire
 - 16.1.2.2 Courtroom procedures and rules
 - 16.1.2.3 Rules of evidence packaging and handling in the courtroom setting
 - 16.1.2.4 Examiner qualifications
 - 16.1.2.5 Technical testimony
 - 16.1.2.6 Discovery issues
 - 16.1.2.7 General guidelines and Frye and Daubert hearing procedures
 - 16.1.2.8 Ethical responsibilities of the expert witness
 - 16.1.2.9 Appropriate public speaking etiquette
 - 16.1.2.10 Significance of accreditation

16.2 Reading Material:

- 16.2.1 Current DFS and FSL administrative policies including DOMs and LOMs regarding court testimony and monitoring.
- 16.2.2 Legal Accountability
 - 16.2.2.1 Bullcoming vs. New Mexico (US S. Ct. 2011)
 - 16.2.2.2 Melendez-Diaz vs. Massachusetts (US S. Ct. 2009)
 - 16.2.2.3 Crawford v. Washington (US S. Ct. 36 2004)
 - 16.2.2.4 Brady vs. Maryland (US S Ct. 1963)

16.2.2.5 Giglio vs. United States (US S. Ct. 1972)

16.2.2.6 Jencks Act (18 USC §3500)

16.2.2.7 Confrontation Clause (6th Amendment, US Constitution)

16.2.3 Legal Obligations: Federal Rules of Criminal Procedure

16.2.3.1 Rule 16: Discovery and Inspection

16.2.3.2 Rule 17: Subpoena (ad Testificandum vs. Duces Tecum)

16.2.4 Evidence Admissibility

16.2.4.1 Frye vs. United States (DC Cir. 1972)

16.2.4.2 Frye Standard-General acceptance and be scientifically sound

16.2.4.3 Daubert vs. Merrell Dow Pharmaceuticals (US S. Ct. 1993)

16.2.4.4 Daubert Standard: Relevance and Reliability

16.2.4.5 Prongs of Daubert (Method Criteria for Acceptance):

16.2.4.6 Federal Rules of Evidence: 403, 701, 702, 703, 704, 705, 706

16.2.5 Eldridge, Heidi. "Meeting the Fingerprint Admissibility Challenge in a Post-NAS Environment". *J. For. ID.* Vol. 61 Issue 5. 2011

16.2.6 Acree, Mark A. "People v. Jennings: A Significant Case for Fingerprint Science in America". *J. For. ID.* Vol. 65 Issue 4. 2015

16.2.7 Ulery, et. al, "Accuracy and Reliability of Forensic Latent Fingerprint Decisions". *PNAS.* Vol. 108 No. 19. May 10, 2011.

16.2.8 Pacheco, Cerchiai, and Stoiloff. *Miami-Dade Research Study for the Reliability of the ACE-V Process: Accuracy & Precision in Latent Fingerprint Examinations.* U.S. Department of Justice. Dec. 2014.

16.2.9 *Fingerprint Sourcebook*, Chapter 13

16.3 Study/Discussion Questions:

16.3.1 None

16.4 Practical Exercises/Skills:

16.4.1 Observe multiple qualified scientists/technicians (as available) testify in court and take notes as to courtroom attire, courtroom procedure (e.g., swearing in, direct, cross, and re-direct and/or re-cross questioning, etc.), evidence handling (if applicable), qualifying questions, technical testimony, and any other pertinent observations. On the 30 Day Progress Report form, record the following: case number, qualified scientist(s)/technician(s) observed, date of observation. Prior to testimony observation, perform the following tasks:

- 16.4.1.1 Review theoretical and practical aspects of the techniques performed during evidence testing for the particular case at hand.
- 16.4.1.2 Discuss with qualified scientists/technicians some potential questions to be asked during qualifications, direct examination, and cross-examination.
- 16.4.1.3 After the court proceedings, review the testimony with the scientist/technician.

Note: Due to the nature of sporadic opportunities to witness LFU members testifying, the Trainee is encouraged to observe as many testimonies as possible during their training period and document accordingly.

16.4.2 Courtroom testimony question and answer training session with trainer, General Counsel, or designee including but not limited to, the following topics:

- 16.4.2.1 Qualifying/*Voir dire* questions
- 16.4.2.2 Direct examination
- 16.4.2.3 Cross examination
- 16.4.2.4 Explanation of analytical processes and SOPs

16.4.3 Participate in a comprehensive mock trial(s) to prepare and evaluate the Trainee as an expert witness in the field of latent prints.

16.4.4 Guidelines for Mock Trial

- 16.4.4.1 The atmosphere of the trial should be formal. It should be conducted in the same manner as a real courtroom situation. This includes conduct, protocol, and all other aspects.

- 16.4.4.2 Harassment of the expert witness by the defense counsel or prosecutor should be kept to the minimum necessary to achieve the desired goal. Questioning by both the prosecutor and defense attorney should be relevant and realistic.
- 16.4.4.3 The participants can include a judge, prosecutor, and defense. Mock Trials require five (5) evaluators, with four (4) evaluators being subject matter experts and one (1) evaluator being a member of the Training Unit. Each evaluator is required to score the witness using the Mock Trial Scoring Sheet (Document Control Number 7495). Scores will be tallied by each evaluator and combined for a final score. Passing score for a final mock trial is a combined score of 80% or greater.
- 16.4.4.4 The "attorneys" must be qualified scientists(s), lawyer(s), or suitable individual(s) designated by the LFU Unit Manager/Technical Leader, and/or DFS Training Manager. It is desirable that this person has knowledge in the area in which the Trainee will be testifying. FSL Management reserves the right to use attorneys from stakeholder agencies as participants, evaluators, and/or observers to the mock trials.
- 16.4.4.5 Permitting "observers" is at the discretion of the FSL Director and/or LFU Management. Observers can review and provide feedback to the Trainee as to performance; however, they will not be a grading evaluator.
- 16.4.4.6 Mock Trials may be videotaped and provided to the Trainee as a feedback mechanism.
- 16.4.4.7 Evaluators will orally provide feedback on performance with the Trainee immediately following the mock trial. The LFU Unit Manager/Technical Leader will provide feedback in writing of any deficiencies and pass/fail status.

16.4.5 Successfully complete at least one external mock trial.

16.5 Demonstration of Competency:

- 16.5.1 Successful passing of at least one external mock trial, with a maximum of two mock trials provided.

16.6 Documentation:

- 16.6.1 Completion of the tasks in this module will be documented where applicable on the checklist titled “Module 6.0 Checklist Legal Overview/Expert Testimony/Mock Trial”, the Mock Trial Scoring sheet and formal documentation of pass/fail from LFU Manager.

MODULE 16.0 CHECKLIST

Legal Overview/Expert Testimony/Mock Trial

Trainee:	Trainer:	Job Title:
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READING MATERIAL		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has read all the required readings for Module 16.0.		
PRACTICAL EXERCISES/SKILLS		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the practical exercises in 16.0, noted the results in their training binder, and results were reviewed by the trainer for accuracy.		
MOCK TRIAL		
	Trainee Initials & Date	Trainer Initials & Date
Trainee has successfully completed the mock trial.		

Signatures below represent successful completion of Training Module 16.0.

Trainee Date

Trainer Date

Unit Manager/ (if applicable) Technical Leader Date

Appendix A - LFU 30 Day Progress Report

Trainee Name:

Unit: LFU

Date of Review:

Readings Completed:

Study Questions Completed:

Practical Exercises Completed:

Cases Examined:

Case Number	Number of Exhibits Examined	Date	Examiner (trainer) Name

Task	Hours
Training	
Administrative Reviews	
Intake of Transfers	
Meetings	
Leave	
Distribution of Cases	
Other	

Other notable duties completed:

Evaluation of Trainer/Suggestions for improvement:

Appendix B – LFU Supervised Casework Observation Form

Examiner: _____				
Evaluator: _____			Date Range: _____	
<i>The evaluator will fill out the below table.</i>				
Case Number	Result type (check all that apply)	Verified	Comments (required for any results not verified)	Evaluator Initials and Date
CCN DFS#	NV: ____ Exclusion: ____ LOV: ____ Inconclusive: ____ ID: ____	Y N		
CCN DFS#	NV: ____ Exclusion: ____ LOV: ____ Inconclusive: ____ ID: ____	Y N		
CCN DFS#	NV: ____ Exclusion: ____ LOV: ____ Inconclusive: ____ ID: ____	Y N		
CCN DFS#	NV: ____ Exclusion: ____ LOV: ____ Inconclusive: ____ ID: ____	Y N		
CCN DFS#	NV: ____ Exclusion: ____ LOV: ____ Inconclusive: ____ ID: ____	Y N		
CCN DFS#	NV: ____ Exclusion: ____ LOV: ____ Inconclusive: ____ ID: ____	Y N		
CCN DFS#	NV: ____ Exclusion: ____ LOV: ____ Inconclusive: ____ ID: ____	Y N		
Additional Observations:				